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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,613	07/25/2001	Woo-Suk Chung	6192.0221.AA	3461

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02/18/2003

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EXAMINER

SEFER, AHMED N

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 02/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/911,613

Applicant(s)

CHUNG ET AL. *lu*

Examiner

A. Sefer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Katsuya et al. US Patent No. 6,081,310.

Katsuya et al disclose in fig. 1 a TFT LCD device, comprising a substrate; a thin film transistor formed on said substrate, having a source electrode 10a and a drain electrode 11; an insulating layer 12 composed of a photo-sensitive organic insulating layer (as in claim 7) formed over an entire surface of said substrate on which said thin film transistor is formed, having a contact hole 13 exposing a portion of the drain electrode; and a pixel electrode corresponding to the thin film transistor, formed on said insulating layer and connected to the drain electrode through the contact hole, wherein said pixel electrode is formed of a multi-layered 14, 15 conductive layer.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yudasaka (JP 10-186412).

Yudasaka discloses in fig. 2 a TFT LCD device, comprising a substrate; a thin film transistor formed on said substrate, having a source electrode and a drain electrode; an insulating layer formed over an entire surface of said substrate on which

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said thin film transistor is formed, having a contact hole exposing a portion of the drain electrode; and a pixel electrode corresponding to the thin film transistor, formed on said insulating layer and connected to the drain electrode through the contact hole, wherein said pixel electrode is formed of a multi-layered 4a, 4b conductive layer.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yudasaka in view Seo US Patent No. 6,323,521.

Yudasaka discloses the claimed subject matter, but does not specifically disclose a drain electrode composed of multiple layers.

Seo discloses in fig. 4 a drain electrode composed of multiple layers, and an uppermost layer 226 of the multiple layer being MoW.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made incorporate the teachings of Seo with Yudasaka's device, since that would provide the source and drain electrodes with a very low electrical resistance as taught by Seo.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yudasaka in view Matsushima US Patent No. 5,917,563.

Yudasaka discloses the claimed subject matter, but does not specifically disclose an insulating layer composed of a photo-sensitive organic insulating layer.

Matsushima discloses in fig. 2 an interlayer insulating film 24 composed of a photo-sensitive organic insulating layer through which a contact hole is formed.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made incorporate the teachings of Matsushima with Yudasaka's device, since that would provide a liquid crystal panel with a large angle of visibility.

As to claim 7, Matsushima discloses (see col. 13, lines 44-46) a top gate type polysilicon thin film transistor.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yudasaka in view of Seo as applied to claim 2 above, and further in view of Hirabayashi US Patent No. 6,358,759.

The combined references fail to disclose projections that work as micro lens formed on an upper surface of an insulating layer.

Hirabayashi discloses (see col. 21, lines 62-67) projections that work as micro lens formed on an upper surface of an insulating layer.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Hirabayashi's teachings, since that would increase condensation efficiency of an incident light resulting an LCD with a bright image.

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Allowable Subject Matter

8. Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

ANS
February 5, 2003

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

